or 24. Claim 74 is amended to correct the spelling of "defibrillating". Applicants submit that the amendments introduce no new matter, and respectfully request entry thereof.

2. Restriction requirement. Applicants hereby confirm the provisional election with traverse of Group I, claims 1-66 and 80-83, which was made in a telephone interview on August 13, 1999. Applicants have not cancelled claims to non-elected subject matter at this time. If the Examiner is satisfied that the claims under consideration meet the statutory requirements for patentability, Applicants respectfully request rejoinder and consideration of withdrawn process claims 67-79 pursuant to MPEP 821.04. These claims depend from or otherwise include all the limitations of the claims under consideration.

3. Double patenting. Claims 1-3 and 5-63 are rejected over various claims of US Patent 5,811,381 under the judicially-created doctrine of double patenting. US Patent 5,811,381 and the present application are commonly owned, and a terminal disclaimer is submitted herewith disclaiming the terminal portion of any patent issuing from this application that would extend past the term of US Patent 5,811,381, or would extend past the term of related US patent 6,015,707. The latter disclaimer is provided in order to facilitate the rejoinder and consideration of presently withdrawn claims. In view of the terminal disclaimer, Applicants respectfully request withdrawal of the rejection on these grounds.

4. Claim rejections under 35 U.S.C. §103. Claims 2, 4, 10, 22, 25, 27-31, 33-37, 39-41, 43, 44, 46, 47, 49, 50, 52, 53, 55, 56, 58, 59, 61, 62, 64, and 80-83 are rejected as obvious under 35 U.S.C. §103(a) over Parslow *et al.* in view of Qureshi *et al.*, Hurst *et al.*, and Olson *et al.*

According to the Examiner,

> Parslow *et al.* teach compositions comprising fungal cellulase, surfactants, cationic fabric-softening compound, and builders (see entire US 4,661,289). Parslow *et al.* do not teach the composition of these claims. Qureshi *et al.* teach Chrysosporium tropicum which has neutral and/or alkaline cellulase activity (see entire publication).

> Hurst *et al.* teach Chrysosporium pannorum which has neutral and/or alkaline cellulase activity (see entire publication). Olson *et al.* teach Chrysosporium lignorum which has neutral and/or alkaline cellulase activity (see column 5, line 37 of US 4,912,056).

Applicants respectfully traverse. Qureshi *et al.* conducted their cellulase assay in a citrate buffer comprising "citric acid" (4.62 g/l) and "sodium citrate" (9.735 g/l) (Qureshi *et al.*, p. 202, last paragraph). The pH of this assay medium is not given by the authors. Qureshi *et al.* do not specify which forms of citric acid (anhydrous or monohydrate) and sodium citrate (trisodium, disodium, or monosodium salt) they employed, and thus it is not possible to calculate with absolute certainty the pH of their medium. However, if citric acid monohydrate and trisodium citrate dihydrate were used, the quantities employed by Qureshi *et al.* are in a precise 2:3 molar ratio (22 mM citric acid and 33 mM sodium citrate), and Applicants submit that these common reagents were almost certainly the ones employed by Qureshi *et al.*

Making this assumption for the moment, a 2:3 molar ratio of these reagents, at 22 and 33 mM concentrations in water, provides an aqueous buffer that is 55 mM in citrate and 99 mM in sodium. Titration of 55 mmol of trisodium citrate (165 mmol Na+) with 99 mmol of hydrochloric acid (1.8 molar equivalents), in a liter of water, would generate the same solution. (The solution would also contain 66 mM NaCl, which would not appreciably affect the pH).

The titration curve of trisodium citrate is shown in Exhibit A, which is a printout from a web page (available at http://www.hgmp.mrc.ac.uk/research/fgsc/fgn42/nozawa.html as of the date of this response). From this curve it can be seen that titration of 50 ml of 20 mM trisodium citrate (1.0 mmol) with 1.8 molar equivalents (1.8 mmol) of HCl, which corresponds to addition of 18 ml of 100 mM HCl, yields a solution with a pH of about 4.0. Applicants point out that if Qureshi *et al.* had used any other sodium salt of citric acid (*i.e.*, the monosodium or disodium salt), the concentration of H+ in the assay buffer would have been higher than in the above assumption, and thus the pH would have been even lower than 4.0.

Applicants have stated that neutral cellulases have peak activity at pH 5.5 to 7.5, and alkaline cellulases have peak activity at pH 7.5 to 11.0 (specification, p. 4 lines 16-18. In view of the pH 4.0 citrate assay buffer employed by Qureshi *et al.*, Applicants respectfully submit that

Qureshi *et al.* do not teach that *Chrysosporium tropicum* produces a neutral and/or alkaline cellulase. Rather, one of ordinary skill in the art would derive from Qureshi only that *C. tropicum* produces a typical fungal acid cellulase, active at pH 4.0.

Hurst *et al.* describe evidence for the presence of a cellulase in *Chrysosporium pannorum* growing in sub-Antarctic tussock grass litter (Hurst *et al.*, paragraph bridging pp. 151-152), but these authors do not report the pH of the litter. Applicants are not aware of the pH of sub-Antarctic tussock grass litter, but Flanagan and Scarborough , in *Soil Organisms and Decomposition in Tundra*, A.J. Holding, Ed., Stockholm 1974 (reference G in the accompanying Information Disclosure Statement) have reported that the pH optima for 60% of arctic fungal cellulases fall between 4.5 and 5.0 (Flanagan and Scarborough, p. 173, first full paragraph.) In any event, Applicants respectfully submit that Hurst *et al.* do not teach the presence of a neutral or alkaline cellulase.

The Examiner notes the presence of *Chrysosporium lignorum* among the many microorganisms listed by Olson *et al.* Applicants point out that Olson *et al.* merely provide a long list of the many bacteria and fungi that are known to produce cellulases. The list itself was merely copied by Olson *et al.* in its entirety from Suzuki and Murata, UK Patent application 2,094,826 (reference A in the Information Disclosure Statement filed herewith), where the list was characterized simply as "[e]xamples of bacteria and fungi which produce cellulases" (UK 2,094,826, p. 3 line 34). Olson *et al.* make the same characterization (Olson *et al.*, US 4,912,056, col. 4 lines 50-52). Moreover, Olson *et al.* do not state that any of these species produce neutral or alkaline cellulases, and the sole example of the use of a cellulase in this reference employs a sour (acidifying agent) comprising fluorosilicic acid and citric acid (Olson *et al.*, US 4,912,056, col. 12 lines 52-54).

Applicants also note that the only "*Chrysosporium*" in Suzuki's (and Olson's) list is *Chrysosporium lignorum*, which was reclassified in 1975 when identity with *Sporotrichum pulverulentum* was established. (K.-E. Ericsson and B. Petersson, *Eur. J. Biochem.*, **51**, 193-206 (1975), of record in the International Search Report for PCT/US97/17669); *see* page 194, col. 1, last paragraph), and evidently reclassified again as *Phanerochaete chrysosporium* (Uzcategui *et*

al., *J. Biotechnology*, **21**:143-160 (1991); also of record in the International Search Report for PCT/US97/17669). With respect to this particular organism, Boegh, in EP 0220016 (reference B in the Information Disclosure Statement filed herewith), discussing cellulase compositions for treatment of cellulosic fabrics, states that:

> "In a preferred embodiment ... the cellulase is Sporotrichum pulverulentum cellulase. This cellulase exhibits a slightly acid pH optimum and is therefore well suited for treatment in a slightly acid aqueous medium with acid auxiliary treatment agents."
> (EP 0220016 B1, p. 2, lines 49-51)

In view of the above facts, Applicants respectfully submit that Olson *et al.* do not teach neutral/alkaline cellulases at all, and in particular do not teach that a *Chrysosporium* species produces such an enzyme.

As the Examiner notes, Parslow *et al.* do not teach the presently claimed neutral/alkaline cellulase compositions. In view of the above remarks, Applicants respectfully submit that none of the other cited references, taken individually or together with Parslow *et al.*, teach or suggest the presently claimed invention. In the absence of any teaching or suggestion in the art that the *Chrysosporium* genus produces neutral/alkaline cellulases at all, Applicants submit that one of ordinary skill would not find it obvious to mutate a *Chrysosporium* species in order to obtain mutants exhibiting an increase in such activity. Applicants accordingly request reconsideration and withdrawal of the rejections of claims 2, 4, 10, 22, 25, 27-31, 33-37, 39-41, 43, 44, 46, 47, 49, 50, 52, 53, 55, 56, 58, 59, 61, 62, 64, and 80-83 under 35 U.S.C. 103(a).

CONCLUSION

The amendment introduces no new matter, and entry of the amendment is respectfully requested. The terminal disclaimer submitted herewith overcomes the double-patenting rejection over commonly-owned US patent 5,811,381. Applicants respectfully submit that the above remarks overcome the rejection of claims as obvious under 35 U.S.C. §103(a).

Favorable consideration and an action passing this case to issue are respectfully requested. If any questions or issues remain, or if the Examiner has any comments or

suggestions for expediting allowance of this application, he is invited to contact the undersigned at the telephone number below.

Respectfully submitted,
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Dated: December 29, 2000

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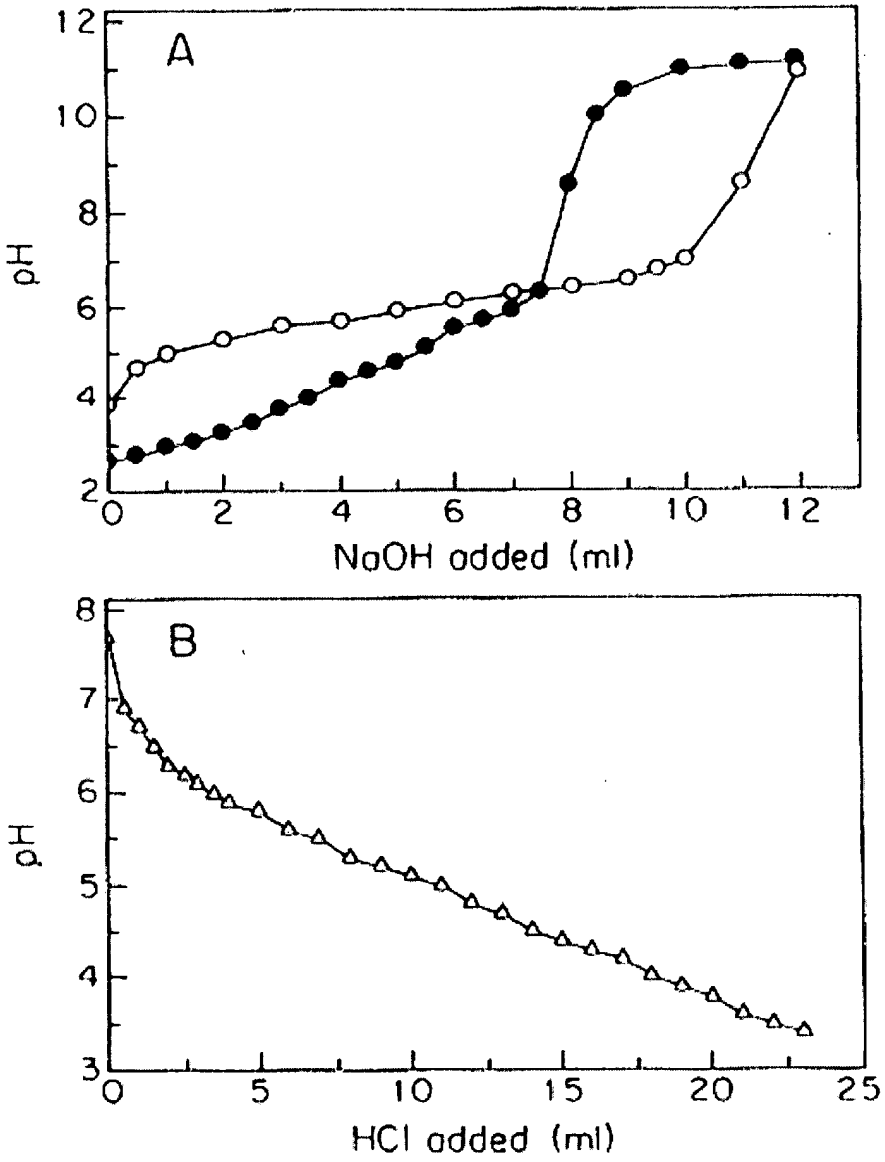

Figure 1. (A) Titration curves of 5 mM citric acid (50 ml) with 100 mM NaOH (þ) and 20 mM MES (50 ml) with 100 mM NaOH (þ). (B) Titration curve of 20 mM sodium citrate (50 ml) with 100 mM HCl. All determinations were made at room temperature and the pH was measured with a Metrhom Herisau E-510 pH meter.

Exhibit A